

REMARKS/ARGUMENTS

Claims 1, 5, 10, 11, 13 and 22-28 have been resubmitted. Claims 1, 13 and 22 have been amended. Support for amended Claims 1, 13 and 22 can at least be found at page 4, paragraph 3, lines 20-24. No Claims have been cancelled. No new Claims have been added.

The Examiner rejected Claims 1, 5, 11, 13, 22-25, 27 and 28 under 35 U.S.C. Section 102(b) as being anticipated by Hudgens et. al. (U.S.P.N. 4,737,379).

The Examiner rejected Claims 10 and 26 under 35 U.S.C. Section 103(a) over Hudgens, et al. in view of Sugiyama et al. (U.S.P.N. 4,673,551).

Examiner Interview

Applicants thank Examiner Brunsman for his time and willingness to discuss this pending matter. On Thursday, August 12, 2004, a telephone interview was conducted with Examiner David M. Brunsman to discuss the rejection of claims 1, 5, 11, 13, 22-25, 27 and 28 under 35 U.S.C. § 102 as being anticipated by Hudgens et al. (U.S.P.N. 4,737,379) and the rejection of claims 10 and 26 under 35 U.S.C. § 103 over Hudgens et al. in view of Sugiyama et al. (U.S.P.N. 4,673,551). Applicants proposed amending independent claims 1, 13 and 22 in the following manner, "wherein the carbon-containing component includes is selected from the group consisting of graphite, amorphous carbon, carbon fibers, and carbon-carbon composites, or a combination thereof." Examiner Brunsman stated he believed the proposed amendments would place our claims outside the teachings of Hudgens as Hudgens teaches employing polymeric substrates and the proposed amendments would exclude polymeric substrates. Examiner Brunsman also

stated and acknowledged that the carbon-containing component of Applicants' amended claims 1, 13 and 22 possesses physical properties, for instance the operating temperatures range, that fall outside the teachings of Hudgens alone and the combination of Hudgens in view of Sugiyama. Examiner Brunsmann indicated he would review the prosecution history once more but believed the proposed amendments overcame the above-mentioned rejections.

Hudgens et al.

Hudgens et al. teaches a method of depositing a substantially hydrogen free or controlled hydrogen content multi-element alloy film on a substrate (See Abstract). While the preferred embodiments of Hudgens are directed to coatings on polymeric substrates, other substrates may be employed such as substrates formed on synthetic polymers and metals coated with a synthetic polymer to which one or more conductive base electrodes are applied (See Col. 20, lines 49-58; Office Action dated July 2, 2004, page 2, last paragraph). Hudgens even suggests an inner layer or under layer may be deposited on the substrate, and in one embodiment the inner layer is deposited carbon (See Col. 15, line 66 to Col. 16, line 2; Col. 16, lines 25-30).

The Examiner noted Hudgens et al. teaches that "even a polymeric substrate having a carbon underlayer would fall within the scope of a 'carbon containing component'" (Office Action dated July 2, 2004 page 2, last paragraph; See Col. 20, lines 49-58). The Examiner also mentioned that "Column 16, lines 65+ [of Hudgens et al.] teach that such layers [of carbon] preferably may be deposited upon an underlayer of a composition differing from the main layer in hydrogen content, which underlayer is applied directly to the surface of the substrate (See lines 39-45)" (Office Action dated July 2, 2004, page 3, first paragraph).

However, "a polymeric substrate having a carbon underlayer" as taught by Hudgens et al. does not fall within the scope of Applicants' amended Claims 1, 13 and 22. As amended, Applicants' Claims 1, 13 and 22 state that "the carbon-containing component is selected from the group consisting of graphite, amorphous carbon, carbon fibers and carbon-carbon composites". The polymeric and metallic materials taught and suggested by Hudgens et al. fall outside the "group consisting of graphite, amorphous carbon, carbon fibers and carbon-carbon composites" of Applicants' amended Claims 1, 13 and 22.

In the above-mentioned telephonic interview, Examiner Brunsman stated he believed the substrates and substrates having a carbon underlayer as taught by Hudgens fall outside the carbon-containing component of Applicants' amended claims 1, 13 and 22.

The Examiner also stated in the above-referenced Office Action that "a composition falling squarely within the limits of the instant claims would be expected to exhibit similar coefficient of thermal expansion as physical properties are inseparable from a particular composition" (See Office Action dated July 2, 2004, page 3, first paragraph). In the above-mentioned Examiner interview, Examiner Brunsman acknowledged that the teachings of Hudgens et al., for instance the operating temperatures range, fall outside the physical properties of the carbon-containing component of Applicant's amended claims 1, 13 and 22.

In light of this acknowledgement, it is also important to note that unlike the "carbon-containing components" of Applicants' amended Claims 1, 13 and 22, Hudgens et al. motivates one skilled in the art to employ substrates formed on synthetic polymers and metals coated with a synthetic polymer (See Applicants' Amended Claims 1, 13 and 22; Hudgens, Col. 20, lines 49-58). Hudgens et al. also teach that "the method of the invention allows deposition to

be carried out with the substrate below the temperatures at which organic polymeric substances degrade, e.g., decompose, melt, soften, and/or undergo phase transformations, typically 170°C...” (See Col. 10, lines 28-41). Hudgens et al. notes these operating conditions avoid “thermal degradation of the underlying microelectronic circuit element substrates, data storage materials, or thermally degradable, e.g., plastic, substrates.” (Id.)

As a result, the substrates and substrates having a carbon underlayer of Hudgens et al. are unlikely to exhibit a coefficient of thermal expansion similar to or the same as the coefficients of thermal expansion exhibited by the “carbon-containing components” of Applicants’ amended Claims 1, 13 and 22.

Therefore, Applicants’ amended Claims 1, 13 and 22, and Claims 5, 11, 23-25, 27 and 28 by virtue of their dependency upon said amended independent claims, are not anticipated by Hudgens et al. under 35 U.S.C. Section 102(b).

Hudgens et al. in light of Sugiyama et al.

Sugiyama et al. teaches the art of plate-fin heat exchangers adapted for use in superhigh pressure service heat exchangers (See Abstract). As noted by the Examiner, “it would have been obvious to one of ordinary skill in the art to coat the surfaces of the heat exchangers with the film disclosed by US 4,737,379 because that reference teaches they are hard, corrosion resistant and abrasion resistant.”

As noted by Examiner Brunsman in the above-mentioned telephone interview, the carbon-containing component of Applicants’ amended claims 1, 13 and 22 fall outside the teachings of Hudgens et al. As a result, the carbon-containing component of Applicants’ amended claims 1, 13 and 22 also fall

outside the teachings of the combination of Hudgens et al. in view of Sugiyama et al.

Therefore, in light of the comments of Examiner Brunsman and the discussion of the teachings of Hudgens et al., Applicants' Claims 10 and 26, and their dependency upon Applicants' amended Claims 1 and 22, are patentable over the combination of Hudgens et al. in light of Sugiyama et al.

Thus, Applicants' Claims 10 and 26 are patentable over Hudgens et al. in view of Sugiyama et al. under 35 U.S.C. Section 103(a).

CONCLUSION

Reconsideration and withdrawal of the Office Action with respect to Claims 1, 5, 10, 11, 13 and 22-28 is requested.

In the event the examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

Respectfully submitted,

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